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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/769,705	01/25/2001	Gregory L. Snitchler	05770-038002 / ASC-152	4994
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FISH & RICHARDSON PC				
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			EXAMINER	
			ALCALA, JOSE H	
		ART UNIT	PAPER NUMBER	
		2827		

DATE MAILED: 10/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/769,705	SNITCHLER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	José H Alcalá	2827	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 22-35 is/are rejected.
- 7) ☒ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____   |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The cabled conductor wherein the strands are only partly transposed, has not being treated in the specification. It is unclear how can the strands be partially transposed, and therefore the claim was not examined based on art.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1,23-26,28,30,32,33 are rejected under 35 U.S.C. 102(e) as being anticipated by Otto et al. (US Patent No. 6,271,475).

Regarding claim 1, Otto teaches a cabled conductor (device of Figure 7) comprising a plurality of transposed strands (reference number 10) each comprising one or more elements (reference number 12) comprising grains of textured anisotropic superconducting compounds which have crystallographic grain alignment that is substantially unidirectional and directionally independent of the rotational orientation of the strands and filaments in the cabled conductor (See Figure 1A).

Regarding Claim 23, Otto teaches that each strand has a preselected strand lay pitch and each filament has a preselected filament cross-section and filament twist pitch, and the strand lay pitch, filament cross-section and filament twist pitch being cooperatively selected (See Figures 1, 1A, and 7). The recitation: "to provide a filament transposition area permitting the crystallographic grain alignment in the grain direction at the filament cross-over points", is an intended use limitation, and it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

Regarding Claim 24, Otto teaches that the strand lay pitch, filament cross-section and filament twist pitch are cooperatively selected (See Figures 1, 1A, and 7). The recitation: "to provide a filament transposition area which is always at least ten times the preferred direction area of a typical grain of the desired anisotropic superconducting compound", is an intended use limitation.

Regarding Claim 25, Otto teaches that the strand lay pitch, filament cross-section and filament twist pitch are cooperatively selected (See Figures 1, 1A, and 7). The recitation: "to provide a filament transposition area which is always at least thirty times the preferred direction area of a typical grain of the desired anisotropic superconducting compound", is an intended use limitation.

Regarding Claim 26, Otto teaches that each strand has a strand lay pitch and each filament has a filament cross-section and filament twist pitch, and the filament cross-section, filament twist pitch, and strand lay pitch are cooperatively selected (See Figures 1, 1A, and 7). The recitation: "so that the filament width in the plane of the widest longitudinal cross-section of the conductor is greater than the filament height of the widest longitudinal cross-section of the conductor", is an intended use limitation.

Regarding Claim 28, Otto teaches that the cabled conductor has an aspect ratio, width to height of the conductor, greater than or equal to about 3:1 (See Table I).

Regarding Claim 30, Otto teaches that the cabled conductor has an aspect ratio, width to height of the conductor, greater than or equal to about 5:1 (See Table I).

Regarding Claim 32, Otto teaches that the cabled conductor has a packing factor of at least about 75 percent (See Figure 1A).

Regarding Claim 33, Otto teaches that the cabled conductor has a packing factor of at least about 85 percent (See Figure 1A).

5. Claims 2-14, 17-20, 22, 27, 29, 31, 34 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Otto et al. (US Patent No. 6,271,475).

Regarding claim 2, Otto teaches a cabled conductor (device of Figure 7) comprising a plurality of strands (reference number 10) transposed about the longitudinal axis of the conductor, each strand comprising one or more filaments (reference number 12) comprising grains of an anisotropic superconducting compound textured such that the crystallographic c axis alignment of each grain of the superconducting compound is substantially perpendicular to the longitudinal axis of the cabled conductor, independent of the rotational orientation of the strands and filaments in the cabled conductor (See Figure 1).

Regarding Claim 3, Otto teaches that each strand further comprises a conductive matrix material surrounding or supporting the elements (See the material surrounding filaments in Figures 1 and 1A).

Regarding Claim 4, Otto teaches that the anisotropic superconducting compound is a superconducting ceramic (column 7, lines 20-22).

Regarding Claim 5, Otto teaches that the superconducting ceramic material comprises a superconducting oxide (column 7, lines 20-22).

Regarding Claim 6, Otto teaches that each strand is insulated (column 11, lines 45-47).

Regarding Claim 7, Otto inherently teaches that each filament is twisted (since each strand is twisted, column 11, lines 50-53).

Regarding Claim 8, Otto teaches that each strand has a preselected strand lay pitch and each filament has a preselected filament cross-section and filament twist pitch, and the strand lay pitch, filament cross-section and filament twist pitch being cooperatively selected (See Figures 1, 1A, and 7). The recitation: "to provide a filament transposition area permitting the crystallographic grain alignment in the grain direction at the filament cross-over points", is an intended use limitation, and it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

Regarding Claim 9, Otto teaches that the strand lay pitch, filament cross-section and filament twist pitch are cooperatively selected (See Figures 1, 1A, and 7). The recitation: "to provide a filament transposition area which is always at least ten times the preferred direction area of a typical grain of the desired anisotropic superconducting compound", is an intended use limitation.

Regarding Claim 10, Otto teaches that the superconducting ceramic is micaceous or semi-micaceous (column 7, lines 20-22).

Regarding Claim 11, Otto teaches that the superconducting ceramic is a member of the bismuth family of superconducting oxides (column 7, lines 27-35).

Regarding Claim 12, Otto teaches that the filaments are twisted and the filament cross-section, filament twist pitch, and strand lay pitch are cooperatively selected (See Figures 1, 1A, and 7). The recitation: "so that at each point on the filament, regardless of

how it is twisted, the filament width in the plane of the widest longitudinal cross-section of the conductor is always greater than, and preferably twice as large as the filament height orthogonal to the widest longitudinal cross-section of the conductor”, is an intended use limitation.

Regarding Claim 13, Otto teaches that the superconducting ceramic is BSCCO 2212 (column 7, lines 31-35).

Regarding Claim 14, Otto teaches that the superconducting ceramic is BSCCO 2223 (column 7, lines 31-35).

Regarding Claim 17, the limitation that the cabled conductor is a Litz cable, is a mere label for the device claimed by Otto, therefore it has not given any patentable weight.

Regarding Claim 18, the limitation that the cabled conductor is a Rutherford cable, is a mere label for the device claimed by Otto, therefore it has not given any patentable weight.

Regarding Claim 19, the limitation that the cabled conductor is a Rooble cable, is a mere label for the device claimed by Otto, therefore it has not given any patentable weight.

Regarding Claim 20, Otto teaches that the the cable is a braided cable (See Figure 7).

Regarding Claim 22, Otto teaches that the strand lay pitch, filament cross-section and filament twist pitch are cooperatively selected (See Figures 1, 1A, and 7). The recitation: “to provide a filament transposition area which is always at least thirty times



the preferred direction area of a typical grain of the desired anisotropic superconducting compound", is an intended use limitation.

Regarding Claim 27, Otto teaches that each strand has a strand lay pitch and each filament has a filament cross-section and filament twist pitch, and the filament cross-section, filament twist pitch, and strand lay pitch are cooperatively selected (See Figures 1, 1A, and 7). The recitation: "so that the filament width in the plane of the widest longitudinal cross-section of the conductor is greater than the filament height of the widest longitudinal cross-section of the conductor", is an intended use limitation.

Regarding Claim 29, Otto teaches that the cabled conductor has an aspect ratio, width to height of the conductor, greater than or equal to about 3:1 (See Table I).

Regarding Claim 31, Otto teaches that the cabled conductor has an aspect ratio, width to height of the conductor, greater than or equal to about 5:1 (See Table I).

Regarding Claim 34, Otto teaches that the cabled conductor has a packing factor of at least about 75 percent (See Figure 1A).

Regarding Claim 35, Otto teaches that the cabled conductor has a packing factor of at least about 85 percent (See Figure 1A).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otto et al. (US Patent No. 6,271,475).

Regarding claim 15, Otto teaches all the elements of the invention as stated supra for claim 10, but fails to explicitly teach that the superconducting ceramic is a member of the thallium family of superconducting oxides. The thallium family is a well-known and used superconducting material, for its excellent conductive properties at extreme temperatures. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the superconducting ceramic from a member of the thallium family, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding claim 16, Otto teaches all the elements of the invention as stated supra for claim 5, but fails to explicitly teach that the superconducting ceramic is a member of the rare earth family of superconducting oxides. The rare earth family is a well-known and used superconducting material, for its excellent conductive properties at extreme temperatures. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the superconducting ceramic from a member of the rare earth family, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

a member of the rare earth family of superconducting oxides.

**Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references teach some of the elements of the instant claimed invention: Nick (US Patent No. 5,387,891), Snitchler et al. (US Patent No. 6,247,225), Malozemoff et al. (US Patent No. 6,284,979), Otto et al. (US Patent No. 5,885,938), Kaneko (US Patent No. 6,498,302), Lee et al. (US Patent No. 6,256,521), Schaetti (US Patent No. 3,643,001), Horvath et al. (US Patent No. 4,169,964), Benz (US Patent No. 4,336,420) and Ando et al. (US Patent No. 4,791,241).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to José H Alcalá whose telephone number is (703) 305-9844. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (703) 308-1233. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JHA  
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